

IDAHO DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director Eagle Hatchery

Annual Report



October 1, 1979 - September 30, 1980

by
Robert L. Vaughn
Fish Hatchery Superintendent II

December 1980

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	1
OBJECTIVES	3
INTRODUCTION	3
FISH HEALTH	6
FISH TRANSFERS FROM HAGERMAN	7
FISH RELEASES	7
SPAWNTAKING OPERATIONS	7
FISH FEED UTILIZED	7
HATCHERY IMPROVEMENTS	7
SPECIAL STUDIES	8
MISCELLANEOUS ACTIVITIES	8
HATCHERY NEEDS	8
OXBOW HATCHERY	8
ACKNOWLEDGMENTS	8

LIST OF FIGURES

Figure 1. Diagram of Eagle Hatchery	5
---	---

Eagle Hatchery

ABSTRACT

Eagle Hatchery services a large area within the state. All of Region 3 and certain waters within Regions 2, 4 and 6 receive fish from the hatchery.

It was a good production season in 1979 - 1980, although more than usual amounts of disease and fish predation were experienced. A total of 1,704,616 eggs were received for hatching and rearing. There were 947,637 fish hatched and planted from these eggs, 110,000 of which were held over for the next year's production. These totals accounted for a total production of 22,035 pounds. Species produced were Rainbow, Brook Trout, Brown Trout, and Kokanee Salmon. There were 43,800 pounds of fish feed fed for a conversion ratio of 1.99:1.

Holdover rainbow for the coming season were vaccinated for Enteric Red Mouth disease.

The two houses on the station were insulated by the Department engineering crew. A new bridge was built to replace the old one across the access road to the unloading dock.

The waters serviced by the Eagle Hatchery, which includes most of southwestern Idaho, were stocked with the allocated numbers of fish.

The hatchery is centrally located in the Boise Valley and receives a large number of visitors.

Hatchery personnel were notified of a change of duty station near the end of the fish year.

Some physical features of the hatchery limit future expansion for increased production.

Author:

Robert L. Vaughn
Fish Hatchery Superintendent II

OBJECTIVES

The objectives of the Eagle Hatchery are to:

1. Raise 25,000 pounds of trout and kokanee for planting in the southwestern Idaho area lakes and streams. These included 19,700 pounds of rainbow trout reared to 8-10 inches in length. There were 3,270 pounds of rainbow reared to 0-3 inches in length, 624 pounds of kokanee 0-3 inches in length, 1,025.75 pounds of german brown trout 0-3 inches in length and 1,029.25 pounds of brook trout 0-3 inches in length.
2. To release catchable and fingerling fish in all allocated lakes and streams in Region 3 and certain areas of Regions 2, 4 and 6. The Boise River and Payette River drainages of Region 3 are the major areas served. Additional areas served from Eagle are: Waha and Manns Lake in the Lewiston area of Region 2, Spring Valley reservoir in the Moscow area and Winchester Lake in the Grangeville area. Some 50,000 rainbow fingerlings were planted in each of these lakes this season.
3. Take spawn and rear kokanee salmon. Eggs are taken at the Anderson Ranch trap and returned to Eagle for hatching and rearing. There were 487,470 eggs taken, and 125,216 0-3 inch fingerling were reared and planted. Excess eggs, when available, are eyed at Eagle, then shipped to other sites for rearing.
4. Redistribution of 240,000 catchable rainbow weighing 60,910 pounds to area waters. These fish are transferred to Eagle from the Hagerman hatchery.

INTRODUCTION

Eagle Hatchery is located 12 miles due west of Boise, 7 miles north of Meridian, 5 miles west-southwest of Eagle, 12 miles east of Caldwell and 12 miles northeast of Nampa. It is located in a central area of the Boise Valley. Its location is convenient for a heavy influx of visitors and tourists. Emphasis is put upon the station as a public relations center for the Department of Fish and Game. A visitors' center is maintained for this purpose.

The hatchery receives its water from a complex of seven artesian wells, each well varying in water flow. The wells are high in dissolved nitrogen gas, which at various stages of fish rearing can cause problems. Care must be exercised in egg hatching and fish rearing to avoid these problems. The total water flow is 2.5 cubic second feet. This relatively small flow is the limiting factor for production. Ten cfs would be desirable for the pond areas available. Complete reuse of water available at the hatchery is necessary to rear the 25,000 pounds of fish. Reuse of the water poses problems and hazards for fish production.

Production oriented expansion could come by introducing pumps at the well heads. Drilling more wells reduces flow at the existing wells.

The physical features at the Eagle hatchery are:

- 2 permanent employees residences
- 1 office and feed storage building
- 1 hatching building, housing five double stacks of Heath incubator trays, and 23 concrete vats for rearing fry and fingerling. One side or nine vats of the one side receive such high concentrations of nitrogen gas that they can seldom be used.

4 short raceways, 50 feet x 6 feet x 20 inches
 8 long raceways, 138 feet x 66 inches x 18 inches
 4 horseshoe ponds for fish rearing, total measurement 400 feet
 x 30 feet x 29 inches
 1 lower pond 100 feet x 30 feet
 1 visitors center and aquarium
 7 artesian wells

Physical features diagram see Figure 1.

FISH PRODUCTION

Fish eggs received at the hatchery were:

Brook trout	200,214
Brown trout	380,520
Rainbow	636,412
Kokanee	<u>487,470</u>
Total	1,704,616

The brook trout eggs were received at the hatchery in late December 1979. These eggs were shipped to Eagle from a hatchery at Deer Park, Washington. The eggs were small and some were lost prior to hatching. I believe that the loss of unhatched eggs was from poor fertility from young, small brood stock. More losses were suffered from cannibalism. I find brook trout prone to feed upon one another heavily under crowded conditions. We graded the fish three times and still suffered losses. The fish did not have any disease problems. We planted 100,595 brook trout fingerlings. These were healthy, vigorous fish. Most of these fish were planted in the Ashton, Island Park areas, four ponds at Sand Creek, west of Ashton, Sheridans and Trudes ponds at Island Park. Some were planted in ponds in the Lewiston area. A plant of 1,180 brook trout went to Tysons pond in exchange for largemouth bass.

The brown trout eggs were received from Plymouth, Massachusetts and a National Hatchery in Nebraska. Eggs from both places survived equally well. There were 223,741 reared to 0-3 inch size and planted. The Boise River, Payette River, Wilson Drain, Elijah Drain and Ten Mile Drain received these fish.

There were 636,412 rainbow eggs received as eyed eggs from the Hayspur Hatchery. We planted 326,620 as 0-3 inch fingerling. The fingerlings were planted in Winchester Lake near Grangeville and Manns Lake at Lewiston, Spring Valley Reservoir at Moscow, Horsethief Reservoir near Cascade, Sage Hen Reservoir north of Emmett and Cascade Reservoir. We held over 110,000 for the next year's production.

There were 487,470 kokanee eggs brought to the hatchery for rearing from the South Fork Boise River fish trap. Most of these were not good quality eggs. An approximate hatch of 50% was obtained. I attribute the low percentage to the presence of many unfertilized eggs, probably from green eggs taken. Also, many weak fish hatched which resulted in losses and pinheading. The fish that survived to planting were vigorous, healthy fingerling.

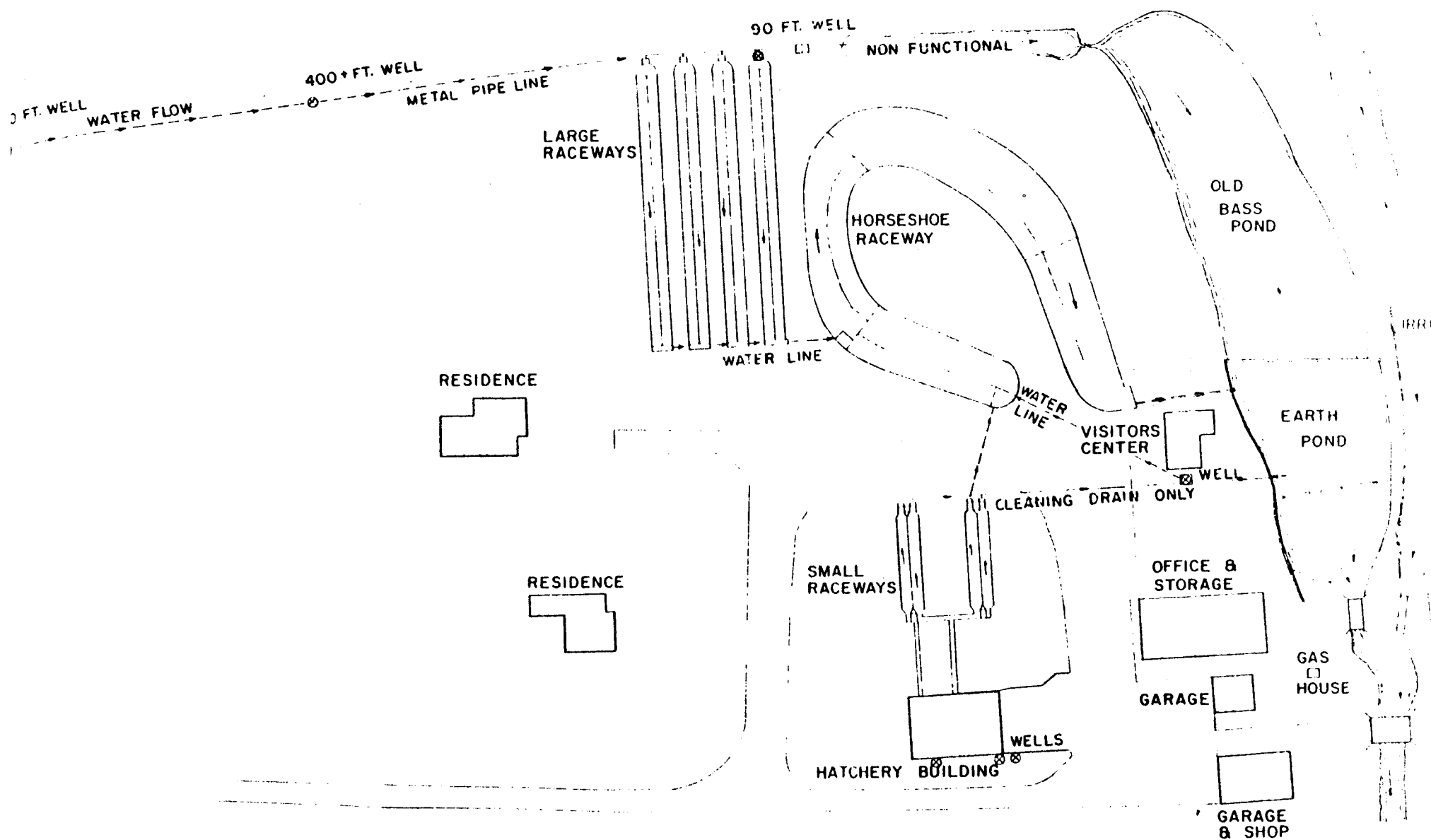
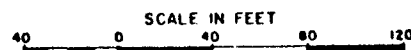


Figure 1.

DIAGRAM

EAGLE HATCHERY



Most of these fish were planted back into the South Fork Boise River in the Featherville area. A lesser amount was planted in Mores Creek above the mouth of Roby Creek.

There were 22,035 pounds of fish produced during the fish year 1979-1980. The initial production goal was 25,000 pounds. Bird depredation and two outbreaks of Enteric Red Mouth disease created a shortfall of 3,000 pounds. The numerous Heron rookeries in close proximity to the hatchery created special problems. Our methods and ability to control the depredation were quite ineffective.

The numbers of pounds of fish produced by species were:

Rainbow	0-3 inches	3,270 pounds
Rainbow	6 inches or larger	19,700 pounds
Kokanee	0-3 inches	624 pounds
G. Brown	0-3 inches	1,025.75 pounds
Brook	0-3 inches	1,029.25 pounds

Numbers of fish produced by species were:

Rainbow	0-3 inches	326,620
Kokanee	0-3 inches	125,216
Brown	0-3 inches	223,741
Brook	0-3 inches	100,595
Rainbow	6 inches or larger	69,774
Holdover Rainbow		110,000

Fish brought to the hatchery for redistribution from Hagerman Hatchery were:

Rainbow	6 inches or larger	223,573 fish
		60,910 pounds

Fish on hand at the end of the fish year were:

Rainbow	3-6 inches	101,691 fish
		10,263 pounds

FISH HEALTH

This fish year, diseases were restricted primarily to Enteric Red Mouth. The disease has become hard to control. We had moderately heavy losses during two episodes of the disease. The first outbreak occurred early on in the season. We fed Sulfa and Terramycin mixed for a two week period. We obtained poor response to the treatment. It was never completely eradicated, but the fish did recuperate either from their own response or from the treatment. The fish broke down with the disease again in the spring. We fed Sulfa-terramycin again for two weeks, response was again slow.

Fish health is hard to control because of bird activity and the necessity of reusing the water from pond to pond. The birds go from pond to pond and spread the disease organisms. They will carry fish from one pond to another in their predation activities. Water reuse seeds disease organisms from one area to another.

Brief episodes of Gill Disease occurred several times during the year. These are controlled with three consecutive day treatments of Potassium Permanganate.

The holdover rainbow for fish year 1980-1981 were vaccinated for Enteric Red Mouth disease. At the close of the year, these vaccinated fish showed no sign of the disease.

FISH TRANSFERS FROM HAGERMAN

There were 223,573 catchable rainbow transferred to Eagle for planting in Region 3. These fish weighed 60,910 pounds. The average fish size was 3.67 per pound.

FISH RELEASES

Fish were planted in the area and adjacent areas as per prescribed catalog recommendations from the area Fishery Biologist.

The season was average, Boise Valley plants were started in March for some year-round fisheries. Fish planting proceeded through the summer and all fish were planted, except a few year-round fisheries by 1 September 1980.

No special problems were encountered during the planting season.

SPAWNTAKING OPERATIONS

Kokanee spawning was a part of the hatchery operation in 1979-1980. Fish came into the trap on the South Fork of the Boise River late this year. The usual problem of getting fish to ripen was encountered. Spawning started in September and continued into October. There were 487,480 eggs returned to Eagle for hatching and rearing. The close proximity of the trap to the reservoir contributes to poor quality eggs. The fish do not ripen well this close to the reservoir. Some fish die with green eggs in them, not ripening at all.

FISH FEED UTILIZED

A total of 43,800 pounds of fish feed was purchased and fed. The feed was of both Rangens and Clear Springs origin. Each company had the low bid for six months. I consider both feeds equally good. Clear Springs makes a softer pellet, subject to crumbling and breaking down after about 30 days storage. Rangens feed holds up better in storage.

The food cost was \$8,481.95. We fed 1:99 pounds of fish feed for every pound of fish produced. A better conversion ratio may have been achieved if fish disease had not been so prevalent during the year. The cost per pound of fish produced was \$.385 using only feed costs in cost calculations. When all production and transportation costs, including the costs of planting fish from Hagerman State Fish Hatchery, but excluding capital outlay items, was \$2.87 per pound of fish planted.

HATCHERY IMPROVEMENTS

Improvements to the hatchery were:

1. Insulating both houses.

2. A vacuum pump was installed on the fish loader, to enhance priming of the water pump.
3. A new bridge was put across the access road to the feed storage building unloading ramp. This bridge provides entry over the hatchery water outlet.

SPECIAL STUDIES

The holdover rainbow were vaccinated for Enteric Red Mouth disease for the first time at Eagle.

MISCELLANEOUS ACTIVITIES

Many visitors visited the hatchery this year. The hatchery's central location to the cities within the Boise Valley contribute to a large influx of people. The valley's steady population growth assures that this activity will continue to grow.

Approximately 2,775 largemouth bass were salvaged from Chuck Tyson's Pond in Reynolds Creek drainage. These fish were transferred to fisheries in eastern Idaho, Indian Creek Reservoir, Emmett ponds, Horseshoe Bend Mill Pond in Region 3, and to dredge ponds in the Lewiston area. There were 1,180 brook trout fingerling, 1,105 brown trout and 560 catchable rainbow returned to Tyson's Pond in exchange.

HATCHERY NEEDS

Pertinent improvement to the hatchery is the need for the 4 small raceways and lead trough from the hatchery building to be replaced. The lead trough leaks and the drain in the outlets is of the old wooden drain pipe which is grown in with tree roots and is virtually impossible to clean out. The 4 small raceways are deteriorated.

More water at Eagle is an improvement which is always in need. Pumping from an existing well is probably the only way to get more water.

OXBOW HATCHERY

Since its onset in 1963, Oxbow Hatchery has been under supervision of the Superintendent of the Eagle Hatchery. Supervision and assistance was given when necessary. Aid in sorting and spawning of Fall Chinook, finally of steelhead, performance evaluations and hatchery budgeting was done.

In May 1980 the Oxbow status was changed and taken from Eagle supervision. It became a separate entity.

ACKNOWLEDGMENTS

Hatchery staffing during the year included Robert Vaughn, Fish Hatchery Superintendent II; Michael Graham, Fish Hatchery Superintendent I; Tim Spiker, a YACC employee for two months; Chad Dodge, a YACC employee for four months; and a CETA employee for three summer months.